Intelligent Transportation Systems Standards Training Program

Jane Lappin

for

Mac Lister
Professional Capacity Building Program Manager
ITS Joint Program Office

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4:00 – 5:30 pm

Overview of ITS Standards

www.standards.its.dot.gov

- ITS-JPO is tracking 98 ITS Standards
- Maintaining an awareness of deployment and testing activities
- Eight ITS Standards have been developed using a Systems Engineering Process (SEP)
  - Standards include user needs, requirements, needs to requirements and requirements to design matrices, and design solutions
- The ITS community needs training and assistance deploying ITS Standards
- Since 2005, limited ITS Standards training has been offered
- The emphasis of the proposed training is to promote the use of all ITS Standards

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Defining a New Training Program

- Involve industry stakeholders to ensure technical content meets the training needs
- Create training in a modular format to provide flexibility for trainees
- Create modules with different audiences in mind

Level I	• Decision makers • Project managers
Level II	• Project managers • Engineering staff
Level III	• Engineering staff • Developers/coders

- Establish a Technical Advisory Committee (TAC)
  - Provides guidance and input to module development
  - Includes state and local public agencies, FHWA division offices, ITS subject matter experts, and professional development experts
- Deliver training via enhanced webinars, blended learning sessions, or classroom style
- Archived webinars to be available for the ITS community

Training Framework

	Acquisition Training	Testing Training
ITS Standards with Systems Engineering Content	✓	✓
ITS Standards without Systems Engineering Content	✓	✓

Training Framework

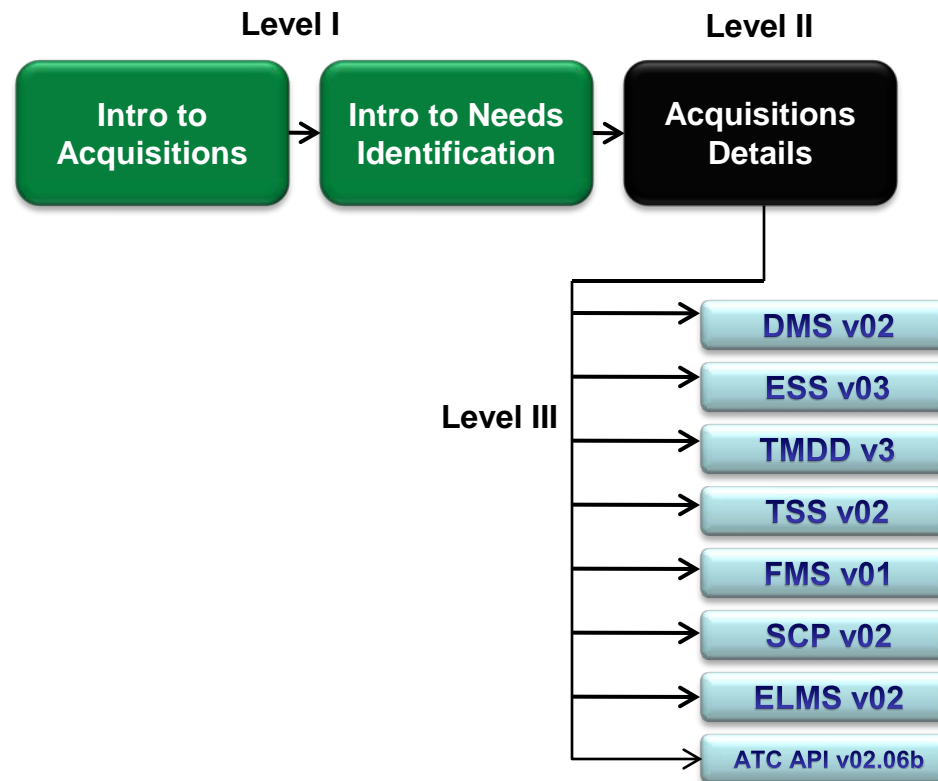|	Acquisition Training	Testing Training
ITS Standards with Systems Engineering Content	✔	✔
ITS Standards without Systems Engineering Content	✔	✔

Acquiring ITS Standards with SEP content

- Deployers need assistance incorporating ITS Standards into procurement documents
- Proposed modules for general acquisition
  - Introduction to ITS Standards Acquisition
  - Introduction to Needs Identification for ITS Standards
  - Details on Acquiring ITS Standards
- Proposed modules for standards specific acquisition
  - Understanding User Needs and Specifying Requirements for NTCIP 1203 v02 Dynamic Message Signs Standard
  - Understanding User Needs and Specifying Requirements for NTCIP 1204 v03 Environmental Sensor Systems Standard
  - Understanding User Needs and Specifying Requirements for ITE Traffic Management Data Dictionary (TMDD) v3 Standard
  - Specifying Requirements for NTCIP 1209 v02 Transportation Sensor Systems
  - Specifying Requirements for NTCIP 1210 v01 Field Management Stations
  - Specifying Requirements for NTCIP 1211 v02 Signal Control and Prioritization
  - Specifying Requirements for NTCIP 1213 v02 Electrical and Lighting Management Systems
  - Specifying Requirements for ITE Advanced Transportation Controller Application Programming Interface v02.06b

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Acquisition Training for SEP-Developed ITS Standards

Properly acquired ITS Standards products assist in testing

Level I

Level II

Intro to Acquisitions → Intro to Needs Identification → Acquisitions Details

Level III

- DMS v02
- ESS v03
- TMDD v3
- TSS v02
- FMS v01
- SCP v02
- ELMS v02
- ATC API v02.06b

- This applies to the following ITS Standards:
- NTCIP 1203 v02 DMS, NTCIP 1204 v03 ESS, ITE TMDD v3, NTCIP 1209 v02 TSS, NTCIP 1210 v01FMS, NTCIP 1211 v02 SCP, NTCIP 1213 v02 ELMS, ITE ATC API v02.06b

Training Framework

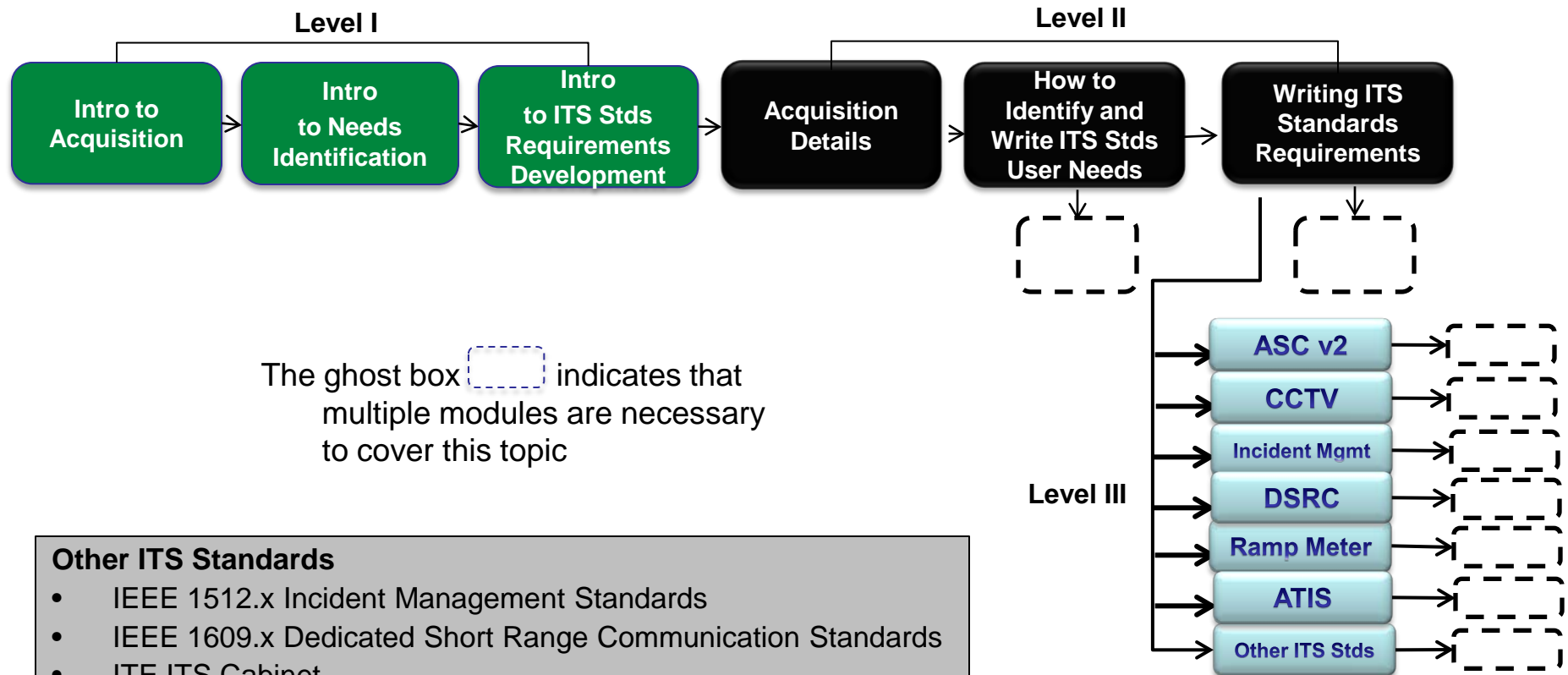|	Acquisition Training	Testing Training
ITS Standards with Systems Engineering Content	✔	✔
ITS Standards without Systems Engineering Content	✔	✔

Acquiring ITS Standards (No SEP Content)

- Additional training modules required to assist deployers in defining needs and requirements
- Additional modules for general acquisition (Level I and II)
  - How To Identify and Write ITS Standards User Needs
  - Introduction to ITS Standards Requirements Development
  - Writing ITS Requirements – What Project Managers and Staff Need to Know
- Proposed modules for standards specific acquisition (Level III)
  - Identifying and Writing Specific Needs for NTCIP 1202 v02 Actuated Traffic Signal Controller (ASC) Units – User Needs
  - Identifying and Writing Specific Needs for NTCIP 1202 v02 Actuated Traffic Signal Controller (ASC) Units – Requirements
  - Identifying and Writing Specific Needs for NTCIP 1205 v01 Closed Circuit Television (CCTV) – User Needs
  - Identifying and Writing Specific Needs for NTCIP 1205 v01 Closed Circuit Television (CCTV) – Requirements
  - Additional courses are listed on the next slide

Acquisition Training for Standards (No SEP Content)

Level I

Level II

Intro to Acquisition → Intro to Needs Identification → Intro to ITS Stds Requirements Development → Acquisition Details → How to Identify and Write ITS Stds User Needs → Writing ITS Standards Requirements

The ghost box [_____] indicates that multiple modules are necessary to cover this topic

Level III

- ASC v2
- CCTV
- Incident Mgmt
- DSRC
- Ramp Meter
- ATIS
- Other ITS Stds

Other ITS Standards

- IEEE 1512.x Incident Management Standards
- IEEE 1609.x Dedicated Short Range Communication Standards
- ITE ITS Cabinet
- ITE Advanced Transportation Controller 5.2
- NTCIP 1206 v03 Data Collection and Monitoring (DCM)
- NTCIP 1207 v02 Ramp Meter Control
- SAE J2735 DSRC Message Sets
- SAE 2354 Advanced Traveler Information System (ATIS)

Training Framework

Training modules will be developed similar to the acquisition modules.

	Acquisition Training	**Testing Training**
ITS Standards with Systems Engineering Content	✔	✔
ITS Standards without Systems Engineering Content	✔	✔

ITS Standards Testing Module Examples

ITS Standards with SEP-Developed Test Procedures	ITS Standards without Test Procedures
Introduction to ITS Standards Training	How to Develop Test Cases for Your ITS Standards Test Plan
How to Write an ITS Standards Test Plan	How to Develop the Test Procedures for Your ITS Standards Test Plan
How to Develop Testing Design Specifications for Your ITS Standards Test Plan	Applying Your Test Plan to the NTCIP 1202 Actuated Signal Controller Standard
Applying Your Test Plan to the NTCIP 1203 Dynamic Message Sign Standard	Applying Your Test Plan to the NTCIP CCTV Standards
Applying Your Test Plan to the NTCIP 1204 Environmental Sensor Systems Standard	Applying Your Test Plan to the ITE Traffic Management Data Dictionary (TMDD)

A New ITS Standards Training Program

ITS Standards Acquisition
and Testing Training…

	Acquisition Training	Testing Training
ITS Standards with Systems Engineering Content	✔	✔
ITS Standards without Systems Engineering Content	✔	✔

Developed for multiple audiences…

Level I	• Decision makers • Project managers
Level II	• Project managers • Engineering staff
Level III	• Engineering staff • Developers/coders

Promoting the use of ITS Standards that support the deployment of interoperable systems

Year One Development

18 Modules covering:

- ITS Standards Overview
- Acquisition Core for SEP and non-SEP systems
- Acquisition Standard Specifics
  - Dynamic Message Signs (DMS)
  - Environmental Sensor Stations (ESS)
  - Traffic Management Data Dictionary (TMDD)
- Testing Core for SEP
  - DMS
  - ESS

Year One Results

- Information module complete
- Level I and II modules complete for standards with Systems Engineering content
- Level III complete for Acquisition and Testing of 1203 DMS and 1204 ESS
- Level III complete for Acquisition of ITE TMDD

Benefits of Training Program

- ITS Standards Training
  - Focuses training on Systems Engineering principles
  - Walks the user through the use of the standards from acquisition through testing
- Flexibility of Delivery Mechanisms
  - Interactive webinars
  - Blended learning
  - Classroom options
  - Train as needed
    - Individually
    - Group setting

Contact Information

- Mac Lister, ITS JPO Program Manager
  Professional Capacity Building
  ITS Joint Program Office
  Research and Innovative Technology Administration
  US DOT – RITA, HOIT-1 Room E33-418,
  1200 New Jersey Avenue, SE, Washington, DC 20590
  Phone 708 283-3532
  mac.lister@dot.gov

  www.pcb.its.dot.gov

For More Information…
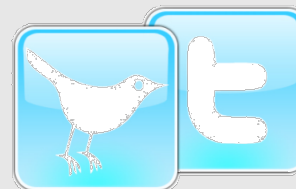
Please visit the following websites:

www.its.dot.gov

www.standards.its.dot.gov

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http://www.its.dot.gov/rss_feed.htm   http://www.its.dot.gov/exit/twitter.htm

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